

**CABTECH<sup>TM</sup>, INC.**9105 FALL RIVER LANE  
POTOMAC, MD 20854301-299-6380  
FAX 301-299-1391**FAX RECEIVED****JAN 30 2001****GROUP 1600****OFFICIAL****CORRECTED COPY****FAX****To:** Commissioner for Patents**From:** Frank Portugal, Ph.D.**Date:** January 30, 2001**Pages**  
**(including cover):** 9**Message:** Certificate of Facsimile Transmission to Patent and Trademark Office

I certify that this document and its attachments (9 pages) is being transmitted to the Commissioner of Patents at fax number [(703) 305-3014] this 30 day of January, 2001.

Frank Portugal, Ph.D.  
Application # 09/027,089

PATENT  
Attorney Docket: CAB-001

**BOX AF**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Frank Portugal

Appl. No.: 09/027,089

Filed: February 02, 1998

For: Method for Identifying Species of  
*Shigella* and *E. coli* Using Operon  
Sequence Analysis


Art Unit: 1655

Examiner: J. Souaya

**Certificate of Transmission**

I certify that this paper and any attachments  
or enclosures identified are being transmitted  
by facsimile to (703) 305-3014 addressed to:  
Commissioner for Patents  
Washington, D.C. 20231

On January 30, 2001

  
signed: Frank Portugal

**Appeal and Continuation**

**Box AF**

Commissioner for Patents  
Washington DC 20231

Sir:

In response to the Final Office Action (Paper No. 12), applicant submits the following supplemental remarks, which place the application in condition for allowance. A Notice of Appeal was filed January 16, 20001.

**Supplemental Remarks**

**A. New Document Sabat, et. al. Proves the New Claims are Unobvious**

In the previous Remarks submitted on January 22, 2001, the Applicant referred to the use of polymerase chain reaction (PCR) method of Sabat et. al. as proof that the new claims are

Application No. 09/027,089  
Attorney Docket No.: CAB-001

unobvious. The Amended claims of January 22, 2001 are intended to cover any process, such as hybridization or PCR, for which an oligonucleotide is selected and used to make discriminations between or among species. In both PCR and hybridization, for example, an oligonucleotide is annealed to a complementary nucleic acid strand as dictated by Chargaff's rules on nucleic acid complementation. These rules specify that a G will hydrogen bond with a C, its complement, and that an A will hydrogen bond with its complement, which can be either a T (DNA) or U (RNA).

The optimal temperature for annealing in both PCR and hybridization reactions is dictated by the melting temperature of the duplex ( $T_m$ ) formed. Once an optimal temperature is determined, in either PCR or hybridization, the oligonucleotide is annealed to its complementary template. Knowledge of an optimal temperature relative to the  $T_m$  is also used to complete each process. For PCR, that involves deliberately exceeding the optimal temperature so that the two strands of the newly formed duplex are fully and completely separated. For hybridization, the use of an optimal temperature relative to the  $T_m$  assures the complete separation of those duplexes that do not meet the preset complementary match criteria.

Application No. 09/027,089  
Attorney Docket No.: CAB-001

**B. The Reference Cited by the Examiner**

In the remarks to Examiner filed on January 22, 2001, regarding the citation of Hammond (5,374,718), the Applicant in his previous remarks mentioned (page 6) a comparison of the 16S rRNA sequences for *Chlamydia pneumoniae* (GenBank CHT16SR) and *Chlamydia psittaci* (GenBank E17341). To assist the Examiner in her review of the Reply and Amendment, the Applicant encloses both sets of sequences.

Respectfully submitted,

Date: January 30, 2001

By:

  
Applicant: Frank Portugal

Encls: GenBank CHT16SR  
Gen Bank E17341



PubMed Nucleotide Protein Genome Structure PopSet Taxonomy OMIM

Search [Nucleotide] for

Limits Index History Clipboard  
☐ Default View as ☐ HTML ☐ Hide Brief and LinkBar

1: GI "174111" [GenBank] Chlamydia pneumoniae 16S ri... PubMed, Related Sequences, Taxonomy

LOCUS CHT16SR 1554 bp rRNA BCT 21-SEP-1993  
 DEFINITION Chlamydia pneumoniae 16S ribosomal RNA sequence.  
 ACCESSION L06108  
 VERSION L06108.1 GI:174111  
 KEYWORDS 16S ribosomal RNA.  
 SOURCE Chlamydia pneumoniae (strain TW183) cDNA to rRNA.  
 ORGANISM Chlamydia pneumoniae  
 Bacteria; Chlamydiales; Chlamydiaceae; Chlamydia.  
 REFERENCE 1 (bases 1 to 1554)  
 AUTHORS Gaydos, C.A., Palmer, L., Quinn, T.C., Falkow, S., Brooks, G.F. and Eiden, J.J.  
 TITLE Phylogenetic relationship of Chlamydia pneumoniae to Chlamydia psittaci and Chlamydia trachomatis as determined by analysis of 16S ribosomal DNA sequences  
 JOURNAL Int. J. Syst. Bacteriol. 43, 610-612 (1993)  
 MEDLINE 93349759  
 FEATURES Location/Qualifiers  
 source 1..1554  
 /organism="Chlamydia pneumoniae"  
 /strain="TW183"  
 /db\_xref="taxon:83558"  
 BASE COUNT 420 a 316 c 452 g 366 t

## ORIGIN

```

1  ttttctgaga atttgatctt agttcagatt gaacgctggc ggctgtggatg aggcattgcaa
61  gtcgaacgga ataatacactt aggttcttat ttagtgccgg aagggttagt agtacataga
121  taatctgccc tcaacttggg gataacggtt ggaacgactc gctaataccg aatgtagtgt
181  aatttaggcat ctaataatata ttaaagaagg ggtcttccgg acctttcggc tgagggaagag
241  tttatgcgat atcagcttgt ttgaccgcca aacttctgc aatggacgaa aggcgatga cgtctaggcg
301  gattgagaga ttgaccgcca aatcttctgc ggttctgtaa gctctgacga ccagactcc tacgggaggg
361  tgcagtcgag ggttctgtaa gcttctgc taaagaagca cggctaaact gagagattgg cgtgtgtgat
421  gaaggcctta ggttctgtaa gcttctgc taaagaagca cggctaaact gagagattgg cgtgtgtgat
481  atcgatttga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
541  atcggagggt gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
601  gaaagttaga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
661  agaggataga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
721  agaaccacag gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
781  gggagacaaa caggattaga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
841  tggatggtct caaccocat caggattaga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
901  aactcgcaa ggtgaaact caggattaga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
961  tggtttaatt caggattaga gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
1021 tagaaataca gcttaccagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
1081 tgccgtgagg tgctagcgtt aatcgattt tgggctcaa ccccaagtca gaaatgcgta agctgaggta
1141 acttagggtg gaaactctaa catggccctt atgtccaggg cgacacacgt gctacaatgg ttagtacaga
1201 gtcaagttag atgtccaggg cgacacacgt gctacaatgg ttagtacaga ttagtacaga
1261 aggtagcaag atgtccaggg cgacacacgt gctacaatgg ttagtacaga ttagtacaga
1321 ctgcaactcg actacatgaa gtcggaattg ctactaatgg cgtgtcagcc ataacgacct gttttacctt
1381 gaatacgttc tcgggccttg tacacacccg cgttcacatc atgggagttg gttttacctt
1441 aagtcgttga ctcaacctat ttataggaga gaggcggcca aggtgaggct gatgactggg
1501 atgaagtcgt aacaaggtag ccctaccgga aggtggggct ggatcacctc cttt

```

//



PubMed Nucleotide Protein Genome Structure PopSet Taxonomy OMIM

Search [Nucleotide] for [ ] Limits Index History Clipboard  
 as

1: GI "5712024" [GenBank] Chlamydia psittaci Gp/Ic 16... Taxonomy, LinkOut

LOCUS E17341 1548 bp DNA PAT 28-JUL-1999

DEFINITION Chlamydia psittaci Gp/Ic 16S rRNA gene.

ACCESSION E17341

VERSION E17341.1 GI:5712024

KEYWORDS JP 1998262679-A/3.

SOURCE unidentified.

ORGANISM unidentified

unclassified.

REFERENCE 1 (bases 1 to 1548)

AUTHORS Fukushima, H., Hirai, K. and Nakagawa, M.

TITLE CHLAMYDIA RIBOSOME GENE

JOURNAL Patent: JP 1998262679-A 3 06-OCT-1998;

A & T:KK, TOKUYAMA CORP

OS Chlamydia psittaci

PN JP 1998262679-A/3

PD 06-OCT-1998

PF 28-MAR-1997 JP 1997078591

PI FUKUSHI HIDETO, HIRAI KATSUYA, NAKAGAWA MASANORI PC

C12N15/09, C07H21/02, C12N1/21, C12Q1/04, C12Q1/68, (C12N15/09, PC

C12R1:01),

PC (C12N1/21, C12R1:19), (C12Q1/68, C12R1:01);

CC strandedness: Double;

CC topology: Linear;  
FH Key Location/Qualifiers

FH  
FT source 1..1548  
FT /organism='Chlamydia psittaci' Ft  
/strain='Gp/Ic'.

## FEATURES

source

Location/Qualifiers  
1..1548  
/organism="unidentified"  
/db\_xref="taxon:32644"

BASE COUNT 415 a 328 c 451 g 354 t

## ORIGIN

```
1 ctgagaattt gatcttggtt cagattgaac gctggcggcg tggatgagcc atgcaagtca
61 aacggaataa tagcgtcggg tattatttag tggcggaagg gtagtaata catagataat
121 ctgtcctcaa cttgggaata acggttggaa acgaccgcta ataccgaatg tggatatgtt
181 aggcattcaa accatatata agaaggggat cttcggacct ttcggttaag gaagagtcta
241 tgggatatca gcttgttggt ggggtaattg cctaccaagg ctttgacgtc taggcggatt
301 gagagattga cgcaccaacac tgggactgag acactgcca gacttctacg gaaggctgca
361 gtcgagaatc tttcgcaatg gacgaaagtc tgacgaagcg acgcgcgtg tgtgatgaag
421 gctctagggt tgtaagcac tttcgcttgg gaataagaga agttggctaa tatccaactg
481 atttgagcgt accaggtaaa gaagcaccgg ctaactcgt gccagcagct gcgtaataac
541 ggagggtgct agcgttaatc ggatttattg ggcgtaaaagg gcgtgtaggc ggaaggaaa
601 gttagatggt aaatcttggg gctcaacccc aagccagcat ctaatactat ctttctagag
661 gtagatgga gaaaaggga ttccacgtgt agcggtgaaa tgcgtagata tgtggaagaa
721 caccagtggc gaaggcgctt ttctaattta cacctgacgc taaggcgcga aagcaagggg
781 agcaaacagg attagatacc ctggtagtcc ttgcccgtaaa cgatgcatac ttgatgtgga
841 tagtctcaac cctatccgtg tcgtagctaa cgcgttaagt atgccgcctg aggagtacac
901 tcgcaagggt gaaactcaa agaattgacg ggggcccgcga caagcagtgg agcatgtggt
961 ttaattcgat gcaacgcgaa gaaccttacc tgggcttgac atgtatttga ccgcggcaga
1021 aatgtcgttt tccgcaagga cagatacaca ggtgctgcat ggctgtcgtc agctcgtgcc
1081 gtgaggtggt gggttaatc cgcgaacgag cgcaaccctt atcgttagtt gccaacactt
1141 aggggtggaa ctctaacgag actgcctggg ttaaccagga ggaaggcgag gatgacgtca
1201 agtcagcatg gcccttatgc ccagggccac acacgtgcta caatggccag tacagaaggt
```



```

1261 agcaatatcg caagatggag caaatcctca aagctggccc cagttcggat ttagtctgc
1321 aactcgacta catgaagtcg gaattgctag taatggcgtg tcagctataa cgccgtgaat
1381 acgttccccg gccttgta caacggccgt caccatcatgg gagttggttt tgccttaagt
1441 cgttgactca acctgcaaa gagagaggcg cccaagggtga ggctgatgac tgggatgaag
1501 tcgtaacaag gtagccctac cggaagggtg ggctggatca cctccttt

```

//

Restrictions on Use | Write to the HelpDesk  
NCBI | NLM | NIH